

inside EPA

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Acting Administrator Pledges No 'Loss of Momentum' in EPA

Robert W. Fri, new acting administrator of EPA, has promised to do all he can to keep the Agency from "losing momentum" because of the sudden resignation of Administrator William D. Ruckelshaus.

Fri, a 37-year-old management specialist who had been Ruckelshaus's deputy for more than two years, was named acting administrator after President Nixon appointed Ruckelshaus acting director of the Federal Bureau of Investigation on April 27.

In an "all hands" memo April 30, Fri said "the top management functions of the Agency will continue without disruption" during the next month or two while a permanent replacement for Ruckelshaus is sought.

Fri said he had planned to return to private life at the end of May (as a partner in the management consulting firm of McKinsey and Co. in Washington), but would delay this move until the selection of a new administrator, for which he asked not to be considered.

"I foresee no shift in policy nor slackening of pace as we pass through this transition," he said. "Our job is too important to hesitate for even a moment in pursuing our goal of environmental quality."

John J. Quarles Jr., assistant administrator for Enforcement and General Counsel, will act as deputy administrator, Fri announced, and Alan G. Kirk III, deputy general counsel, will take over Quarles's



Robert W. Fri

old post. The personnel and duties of the administrator's immediate staff will remain intact.

In Appreciation of a Leader

In his speeches, former Administrator William D. Ruckelshaus often cited a quotation from Oliver Wendell Holmes, Jr.: "I think that, as life is action and passion, it is required of a man that he should share the passion and action of his time at peril of being judged not to have lived." Bill Ruckelshaus's determined leadership of this Agency since its inception embraced that philosophy wholeheartedly, and was a source of pride and inspiration to all of us who worked with him.

All of us remember the milestones, for they were emblazoned in headlines. But the greatest of his accomplishments has been the one perhaps least commented upon. He presided over the or-

ganization of this Agency and established the policies which distinguish it.

We are an independent Agency not only because of our charter, but because he forcefully insisted EPA be such. We pursue a vigorous enforcement policy not only because we are committed to use every tool at our command to arrest environmental degradation, but also because he insisted that the law must protect those who obey it from the abuses of those who ignore it. We are an open Agency not only because of the constraints of the Freedom of Information Act, but because he believed our larger mission was to involve the whole of society in the formulation of a new

environmental ethic.

Each of these policies he pursued with dedication and with an uncommon faith in our ability to prevail, no matter how enormous the task. And throughout his tenure, his unfailing good spirits and infectious humor counseled us to beware taking ourselves too seriously.

Change is seldom welcome, but seldom can it be avoided. Bill Ruckelshaus' openness, his affability, most of all his leadership, will be remembered in this Agency for a long time. As we wish him well in the future, we are grateful that we had the opportunity to "share the passion and action of his time."

—Barry Bergh

Microwave Facility Installed at RTP

By Joseph S. Ali

Research Microwave Engineer

A \$100,000 research facility—entirely designed by EPA engineers—to study the biological effects of microwave radiation was recently installed at the Experimental Biology Laboratory of EPA's research center at Research Triangle Park, N.C.

The facility includes a microwave anechoic chamber—a room lined with material that absorbs the radiation so that there are no “echoes” to disturb the measurement of test effects. “Anechoic” means “no echoes.”

It also has a high-power microwave generator, a mini-computer system for experimental control and data acquisition, and an animal exposure chamber that can provide a controlled environment.

Although the facility currently operates at 2,450 megahertz (the microwave oven frequency), the facility is usable from 300 MHz to 50 gigahertz with the appropriate signal generator.

Bargain Blocks

The anechoic chamber is constructed of blocks of microwave absorbing material which provide a reflection-free exposure environment. The blocks, valued at \$20,000, were acquired as surplus property from NASA in Greenbelt, Md. The chamber is approximately 4 x 4 x 6 meters high on the outside and is shielded with aluminum screen. The screen insures experimenter safety from the exposure field while at the same time shielding the interior of the chamber from background non-ionizing radiation. The interior working area of the anechoic chamber is 3 x 3 x 4.5 meters high.

Since the thermal burden that an animal can tolerate from microwaves is dependent on how much heat he can transfer to his environment, the anechoic chamber is equipped with an environmentally controlled styrofoam exposure

chamber with interior dimensions of 61 x 76 x 76 centimeters. Environmental parameters that can be controlled in the radiation-transparent chamber are: temperature, from —10 to 40°C; humidity, from 20% to 80%; and relative atmospheric gas concentrations.

The microwave energy is generated by a 3,000-watt industrial heating unit operating at a fixed frequency of 2,450 MHz. Available exposure power densities range from one microwatt per square centimeter to 400 milliwatts per square centimeter with a long term stability of 0.1%. The current exposure protection guide in the United States for microwave radiation is 10 milliwatts per square centimeter.

A Mini-Computer

Data acquisition and control system components include a 16,000-

word mini-computer, a magnetic tape transport, a teletype, a 125,000-word disc memory, an analog-to-digital and a digital-to-analog converter. The data acquisition and control system permits completely programmable irradiation studies while monitoring physiologic or behavioral changes.

With the rapid increase in the communication, industrial and domestic applications of microwaves, EPA needs to assess possible health implications of non-ionizing radiation through bio-effects research to properly set radiation exposure standards. Little is known about the low-level, long-term behavioral and physiological effects of microwaves. Among the physiological parameters to be considered by EBL personnel are the effects at the whole animal, cellular, subcellular

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Technician Joy Favor prepares a rabbit for exposure to microwave radiation from horn antenna in chamber ceiling.

Is Mr. Protection In This Library?

Rachel Reed, librarian at the NERC-RTP, got an envelope in the mail recently addressed thus:

Mr. Environmen Protection
Rachel Reed 0-3021970
Sppcp Libry Rm. 826
Durham, NC 27711

Inside was a letter to "Dear Mr. Protection" inviting him to apply for an American Express credit card.

Ms. Reed suspects a careless computer, one that cannot read or spell, is after her business.

Regions Issue Interim Permits For Waste Dumping in Ocean

Working against deadlines set by law before the complex technical and administrative rules could be established, EPA regional administrators in seven Federal regions have issued 36 interim permits to dump waste materials in ocean waters.

The permits are for specific types of waste material, in carefully specified locations where environmental damage will be minimal, and for strictly limited durations.

The seven Regional Offices—all except Regions V, VII, and VIII,

which have no coastal states—received about 60 applications for interim permits under the Marine Protection, Research, and Sanctuaries Act of 1972.

EPA expects to receive about 1,000 applications when the permanent ocean dumping permit system is established, probably sometime in August.

Detailed criteria for ocean dumping have been drafted and are scheduled to be published in the Federal Register this month.

The criteria spell out what kinds of waste cannot ever be dumped, what can be dumped under strict control and under general regulations. There are 120 approved dumping sites, each described by its location, area, depth of water, and type of waste material permitted.

Only two of the sites are designated for sewage sludge, one for New York and one for Philadelphia, permitting temporary continuance of a long-standing practice by these cities.

The criteria define EPA's policy as the regulation of all ocean dumping and the strict control of dumping "any material which would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities . . ."

Civil Service Starts Regional Reviews

A review of personnel management practices in EPA Regional Offices began last month in San Francisco.

Representatives of the Civil Service Commission visited the office to assess the effectiveness of personnel planning, development, and utilization. The Commission is primarily concerned with merit promotion, equal employment opportunity, and labor relations.

Similar CSC reviews are scheduled for the Seattle EPA office in June and the Denver office in July.

Microwave Facility at RTP

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and molecular level of biological organization. The analysis will be directed at those systems that are fundamental to monitoring survival and propagation of the organisms under the auspices of an ongoing program for the genetic evaluation of noxious environmental stresses (GENES) program. This facility

will provide a sound scientific base for this research.

(Editor's note: Joseph Ali was the project officer in charge of designing the facility. He was assisted by Frank Pendleton, Gordon Wharran, Claude Weil, and George Andersen, who was principal designer of the data acquisition system.)



—photos by Ronald Mitchell

Engineer Joseph S. Ali adjusts the mini-computer that records data from a microwave test and controls all conditions in the experimental chamber.

'Safeguard' Promotes Pesticide Safety

EPA's massive drive to alert farmers and farm workers to the dangers of DDT replacements and to train them in safe handling and use practices expects to reach an estimated 245,000 small farmers in 14 Southern States.

Called "Project Safeguard," the drive began in February and is continuing throughout the 1973 growing season, in a joint effort with the Department of Agriculture's Extension Service, and aided by State agricultural authorities, the U.S. Jaycees, and leaders of the pesticide producing industries. Paul W. Pendorf is program manager for the project.

William E. Currie, staff assistant, said safety leaflets had been mailed to nearly a quarter million small farmers; 360,000 posters had been shipped to EPA regional offices for distribution, and 3,000 handbooks delivered for use in training local, volunteer safety aides to make personal contact with pesticide users in their neighborhoods.

By the end of April more than 30,000 farmers had been contacted.

A special mailing to 110,000 physicians and veterinarians was completed May 1, and a 55-slide, 12-minute taped presentation was furnished to 100 key field personnel on the same date, Currie said.



Paul W. Pendorf, program manager, (in top coat) visits a typical country store in southwestern Virginia to check on the distribution of Project Safeguard materials and talk to peanut farmers about safe use of pesticides.

Over 500 radio stations in the area have received 2,300 recorded spot announcements concerning pesticide safety.

'Boards of Directors'

Project Safeguard's day-to-day operations are now in the hands of a five-man "board of directors" in each State consisting of representatives of the EPA Regional Office, the State agricultural agency, the Ex-

tension Service, the Jaycees, and the pesticide industry.

The Jaycees—a nationwide civic and service organization—are supplying on a voluntary, public service basis much of the manpower needed to conduct the program. They are helping in the distribution of dealer displays, radio spot announcements, safety class organization, and contacting the medical and veterinary professions.

Most of the cost of Project Safeguard consists of EPA grants, through the Department of Agriculture, to the States: \$750,000 from EPA added to \$588,000 in State funds. Additional expenses in EPA Regional Offices and headquarters, bring the total cost to EPA to about \$1.9 million.

Measuring Results

How effective will Project Safeguard be?

The best answer to this question, Currie said, will hinge on reports of accidental sickness, injury, and death from pesticide use during this growing season in the 14-state area.

"Human safety is our paramount aim," he said.



Pendorf meets Herbert Luke of Waverly, Va., beside weatherbeaten barn.

The reporting of pesticide deaths and injuries in the past have been spotty and incomplete, he explained, and there is no reliable "data base" on pesticide accident rates. Indeed, the project's training and publicity activities are likely to increase the number of injury reports, simply because more people will be aware of the pesticide hazard and less inclined to blame the poisoning symptoms on other causes.

A comprehensive accident reporting system is being set up. It will include all medical and environmental circumstances of each case, together with treatment, local or state investigations, type of pesticide involved, and whether or not the victim had had any contact with Project Safeguard materials or training.

The machinery and manpower that have been "carrying the word" to pesticide users and their families will be employed in reverse to get complete accident reports back to EPA.

The reports will be compiled and analyzed by the EPA project officers throughout the growing season, and a final report issued in the fall.

Pesticides are used most heavily after planting time for three crops with which Safeguard is most concerned—cotton, soybeans, and peanuts—and they will be applied occasionally later in the year.

These crops are those which, in



Pendorf crouches to examine chemicals stored in a pesticide blending plant as John Anstine, pesticide specialist for EPA's Region III Office, watches.

the past, required lots of DDT, the environmentally dangerous compound that was banned by EPA for most purposes last Dec. 31.

Manufacturers Help

Pesticide manufacturers have cooperated fully and are taking an active part in the program, Currie said. Their knowledge of dealers and distribution systems has been a vital factor in setting up and carrying out the publicity and training aspects, and their local representatives are active in many phases of

the operation, from the State "boards of directors" on down to individual farmer contacts.

Program Manager Pendorf is on loan to EPA from the Pfizer Corporation, the drug and chemical manufacturers, under the Presidential Executive Interchange Program, in which Federal agencies and private business firms trade managerial and technical personnel for short-term assignments.

Assisting Pendorf are Currie, Donald Ellison, Shelley Asen, and Michael Scott, media consultant.

Gladys O'Donnell Dies, Merit Awards Director

Mrs. Gladys O'Donnell, national coordinator of the President's Environmental Merit Awards Program (PEMAP) until she resigned recently because of illness, died May 8 in Long Beach, Calif., at the age of 69.

Before her appointment to the PEMAP post, Mrs. O'Donnell served as a member of the U.S. delegation to the United Nations' 26th Assembly. She had been active in Republican Party politics for many years, starting as an alternate delegate to the party's 1936 national convention.

In 1950, she was elected presi-

dent of the Long Beach Council of Republican Women, served two terms in that post, and went on to become president of the California Federation of Republican Women, secretary and vice chairman of the party's State Central Committee, and finally president of the National Federation of Republican Women.

Mrs. O'Donnell won her first pilot's license in time to join the first women's transcontinental air race in 1929. With only 16 hours of flight time, she placed second, ahead of 22 other flyers. The next year she won the race.

During World War II she helped train Army Corps cadets at a flight school in Visalia, Calif. Since the Army would not accept women instructors, she joined the Civil Aeronautics Authority and trained instructors who then trained cadets.

With her husband, James Lloyd O'Donnell, she founded the Hydro-Test Turbine Service, and after her husband's death she continued to operate the O'Donnell Oil Company in Long Beach.

She is survived by a daughter, Mrs. Charles Doyle of San Ysidro, and five grandchildren.



Bronze medal winners at EPA's Athens, Ga., laboratory pose with their program boss, lab director, and NERC director after the ceremony. From the left they are, first row, R. R. Swank and T. W. Culbertson; second row, NERC-Corvallis Director A. F. Bartsch, W. J. Taylor, C. N. Smith, Ron Estes, J. D. Pope, D. S. Brown, and D. M. Cline; third row, Program Director H. P. Nicholson, W. R. Payne, W. C. Steen, S. W. Karickhoff, E. W. Steffey, J. E. Benner, and SERL Director D. W. Duttweiler; half hidden in rear are G. W. Bailey and Arthur Burks.

15 at SERL Awarded Medals For Commendable Service

Lefohn Named Chief Of Animal Ecology Work at Corvallis

Dr. Allen S. Lefohn has been named chief of the Animal Ecology Branch of EPA's National Ecological Research Laboratory in Corvallis, Ore.

NERL Director Norman Glass said Lefohn and his staff will study the effects of all kinds of environmental pollutants on wildlife and domestic animals.

Animal ecology is one of three branches in NERL, which was established last December as one of nine associate laboratories constituting NERC-Corvallis. The second branch will concentrate on plant ecology studies, and the third will supply advanced, computerized data handling methods to the experimental work of the other two.

Fifteen employees at EPA's Southeast Environmental Research Laboratory (SERL) in Athens, Ga., were recently awarded Bronze Medals for "commendable service" in the laboratory's program of research in agricultural and industrial pollution control.

The program, headed by Dr. H. P. Nicholson, is now investigating the water pollution effects of agricultural chemicals in a cooperative project with the Department of Agriculture's Southern Piedmont Conservation Research Center at Watkinsville, Ga.

Working with Lefohn will be three EPA scientists who recently transferred to Corvallis from the North Carolina center: Dr. Robert Botts, veterinarian; Harold A. Bond, ecologist; and James R. Miller, chemist.

FOSTER HEADS EPA TEAM AT SMOG MEETING

Willis M. Foster, deputy assistant administrator for monitoring, will head a team of American specialists at a two-nation technical conference on photochemical smog in Tokyo next month.

The five-day meeting starting June 11 will be the first formal U.S.-Japan exchange on the subject.

The host country's delegation will be headed by Dr. Soroku Yamagata, director general of the Japan Environmental Agency, and will include experts from that agency and from the Ministry of Health and Welfare.

Three other EPA representatives will take part: Edward Schuck of the Office of Research and Monitoring; Dr. Aubrey P. Altshuler, director of the Chemistry and Physics Laboratory at NERC-RTP; and Dr. David L. Coffin, chief of the Pathobiology Research Branch, NERC-RTP. Dr. Paul R. Miller, of the U.S. Forest Service's Pacific Southwest Forest and Range Experiment Station, also will attend.

Subjects to be discussed include the physics and chemistry of photochemical smog formation, the effects of smog on human health and animal and plant life; and future cooperative air pollution research by the two countries.

Inside EPA, published monthly for all employees of the U.S. Environmental Protection Agency, welcomes contributed articles, photos, and letters of general interest.

Such contributions will be printed and credited, but they may be edited to fit space limits.

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Lake Survey Enters Its Second Year

EPA's flying scientists and an army of laboratory workers, National Guard volunteers, and sewage treatment plant operators are well into the second phase of the three-year, \$5-million survey of eutrophication in the Nation's large lakes.

Throughout the spring and summer and into the fall months, the survey team will move north with the seasons and return, until more than 250 lakes in 17 eastern states have been sampled three times.

The survey, begun last year in New England, is concentrating on lakes and reservoirs that receive waste water from municipal sewage treatment plants and that are, therefore, threatened with premature aging, or eutrophication.

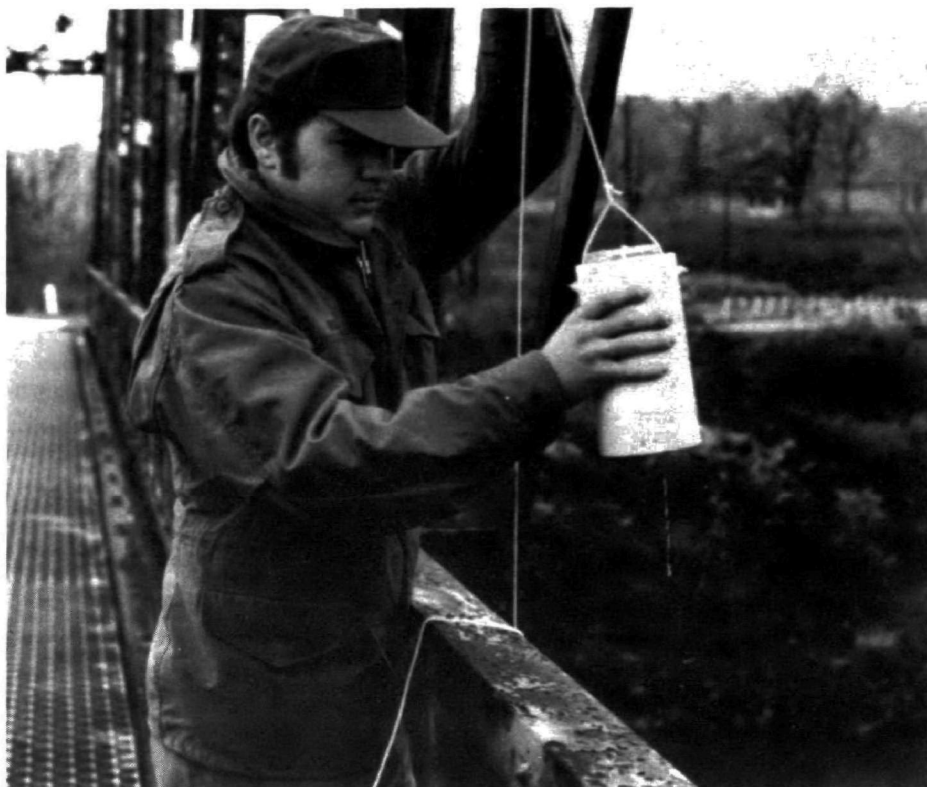
Using three Army helicopters lent to EPA by the Department of Defense, the 14-member survey team from NERC-Las Vegas is working long hours to gather the water samples that when analyzed will reveal the lakes' present condition of eutrophication.

At the same time, two other sampling programs are under way to determine the kinds and amounts of nutrient materials flowing into each lake.

Guardsmen Take Part

One program involves thousands of National Guard volunteers who are collecting monthly water samples from tributary streams to measure the natural runoff of nutrients into the lakes. For the eight states of Region IV, more than 700 stream sampling sites have been selected, or an average of five and a half tributaries for each of the 123 lakes to be surveyed. The adjutant generals of the National Guard in each state have approved of the Guardsmen's work as a public service to be done during field training exercises.

The other sampling program, performed in cooperation with State water pollution control agencies, involves the collection of sewage treatment plant effluent waters, once each month by the plant operators,



National Guard volunteer samples water from a tributary stream to help gather data for EPA's national survey of lake eutrophication.

for the plants discharging effluents into the lakes. This program is designed to measure the input of man-made nutrients, particularly phosphorous.

Last year the helicopter teams logged nearly 100,000 miles in covering more than 220 lakes in the six New England States, plus New York, Michigan, Wisconsin, and Minnesota. This year, with more lakes and States to cover, they expect to fly about 150,000 miles. States to be covered this year include all southeastern states below the Mason-Dixon line, plus New Jersey, Pennsylvania, Ohio, Indiana, and Illinois.

Many Big Lakes

A large portion of the lakes to be studied this year are big ones, accordingly to Robert R. Payne, survey coordinator in the Office of Research and Monitoring. Of the 123 lakes selected in Region IV, 51 are more than 10,000 acres in size and receive sewage effluent from more than 200 treatment plants.

The sampling flights began in Florida, Alabama, and Mississippi and are moving north with the spring. In early summer the team will return and move north again, taking summer samples. The process will be repeated so each lake will be sampled three times.

The team includes three complete air crews, each with helicopter pilot and copilot, a limnologist (lake scientist), and a sampling technician. The crews rotate between two aircraft, while the third is held in reserve.

A truck-mounted mobile laboratory is used to analyze some samples in the field, and others are airmailed to EPA laboratories at Las Vegas or Corvallis. Some samples are analyzed for the algae present and others for algal growth rates in response to various levels of nutrients in the water. For lakes having much recreational use, special samples are sent to NERC-Cincinnati to determine if *Naegleria*,

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Walla Walla Solves a Double Problem

By Lee Johnson
Public Affairs Office
EPA Region X, Seattle

The City of Walla Walla, Wash., has solved a double-barreled waste water problem and made some money doing it.

Half of Walla Walla's problem was common to many cities: the sewage treatment plant was not large enough to handle both the municipal sewage and industrial waste. In summer and early fall, two large food processing plants poured millions of gallons of waste water into Mill Creek, which at that time of year contained only treated water from the sewage plant. So it was a badly polluted stream flowing into the Walla Walla River and thence to the Columbia River.

The other half of the problem was that Walla Walla is in irrigation country; its economy depends on water for crops, and the city and the food plants were literally pouring money into Mill Creek.

With help from the State government and EPA, Walla Walla built a sewage treatment system to solve

the double problem. Mill Creek is no longer polluted; waste water from the food processing plants is no longer wasted, and the city actually made money last year, the first year the new system was in operation.

Walla Walla did all this by setting up its own 1,000-acre farm and using the food processing waste water to irrigate the farm. The farm's first crop, alfalfa, brought about \$12,000 into the city's coffers to help offset the costs of the new system.

Since the first year's crop was something of an experiment, a trial run, City Manager Larry Smith said 1972 would probably be "the worst year we'll ever have at the farm." As the city gains experience with this kind of operation the farm will become more profitable, he said.

"The ordinary farmer tries to get a maximum crop with a minimum of water," Smith said. "We try to get a maximum crop with a maximum of water." Revenue from the farm is only a secondary benefit; the primary concern is to dispose of waste

water in a way that is satisfactory to every one, that is, to prevent pollution of Mill Creek.

To build the system, Walla Walla had to acquire land for the farm, construct pipelines to carry the water to the farm sprinklers, and upgrade the sewage treatment plant—all of which cost about \$2.6 million.

EPA grants totaled \$666,000, slightly more than one third of construction costs for the treatment plant, the pipelines, and sprinkler system. State grants totaled about \$300,000, and the two food companies also contributed.

Effluent from the food plants—Rogers Walla Walla, Inc., and Birdseye Division of General Foods Corporation—is pumped to the city treatment plant and into a "wet well" storage reservoir. When water in the wet well comes up to a certain level, automatic pumps convey it to the city farm.

Almost 83 miles of buried pipe and more than 6,500 sprinkler heads distribute the water over 700 acres of the farm, which also has a well to supplement water flow from the treatment plant.

Walla Walla's municipal sewage is also being used instead of being allowed to pollute. Here again the problem was to get the treated effluent out of Mill Creek during the months when it is essentially a dry creek bed. From about the first of June to mid-November each year, Mill Creek water is diverted for irrigation upstream from the city treatment plant.

The city built a large holding lagoon for the treated and chlorinated sewage plant waste water. Water from the lagoon can now be used by downstream irrigators, with any surplus channeled to the wet well and mixed with food processing water.

The result is that no waste water or sewage is ever released to the dry creek bed. In winter, when natural flow again fills the creek, the treated sewage effluent can be discharged without violating State or Federal water quality standards.

Lake Survey Enters 2nd Year

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a disease-causing amoeba, is present.

The objective of the National Eutrophication Survey is to determine four things for each lake surveyed:

- The present status of the lake in the eutrophication process; is the lake aging prematurely, and to what extent?

- An accurate measure of the lake's input of nutrient materials from natural runoff, from sewage plants, and from other identifiable sources.

- The tolerance of each lake for different kinds of nutrients, i.e., for phosphorus and for nitrogen in various forms.

- The predicted effects of nutrient reduction at the source, e.g., removal of phosphorus at the sewage treatment plants, in improving the lake's trophic condition.

By mid-summer the first reports of last year's survey are expected to be published, giving for each lake the trophic analysis, nutrient loading, limiting nutrients and algal analysis, with recommendations to State and local agencies for corrective measures.

By the year's end all States east of the Mississippi, plus Minnesota, will have been surveyed and the individual lake reports will be well under way.

Plans for 1974 tentatively call for surveying about 600 lakes in the remaining 21 States west of the Mississippi, but Payne said the helicopter teams as presently organized may not be able to cover so much territory in one season.

Co-directors of field activities for the survey are Dr. Jack H. Gakstatter, NERC-Corvallis, and Donald Wruble, NERC-Las Vegas.